

- 14 -

CLAIMS

1. A catheter comprising:
a longitudinal catheter shaft for positioning an ablation electrode
5 within a patient's body; and
an ablation electrode disposed on the shaft and having an outer surface,
wherein the electrode is convertible from a first configuration in which the electrode
outer surface has a first axial size and a first radial size to a second configuration in
which the electrode outer surface has a second axial size and maintains the first radial
10 size.
2. The catheter according to claim 1, wherein the ablation electrode
comprises a first electrode portion and a second electrode portion, the second
electrode portion having a length and being moveable in the axial direction of the
15 catheter, wherein in the first configuration more of the second electrode portion length
is contained within the first electrode portion than in the second configuration.
3. The catheter according to claim 2, wherein in the first configuration,
the second electrode portion length is fully contained within the first electrode
20 portion.
4. The catheter according to claim 2, wherein the ablation electrode
comprises a third electrode portion that is at least partially contained within the
second electrode portion in the first configuration.
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5. The catheter according to claim 2, wherein a pull wire is connected to
the second electrode portion.
6. The catheter according to claim 1, wherein the ablation electrode is a
30 ring electrode.

- 15 -

7. The catheter according to claim 6, wherein the first electrode portion and the second electrode portion are cylindrical.

8. A catheter comprising:
5 a longitudinal catheter shaft for positioning an ablation electrode within a patient's body; and
an ablation electrode disposed on the shaft and having an outer surface, wherein the electrode is convertible from a first configuration in which the electrode outer surface has a first axial size and a first radial size to a second configuration in
10 which the electrode outer surface has a second radial size and maintains the first axial size.

9. The catheter according to claim 8, further comprising an inner shaft portion and an outer shaft portion, the outer shaft portion having a longitudinal slot,
15 wherein
the ablation electrode comprises a flexible, electrically-conductive plate having a first end and a second end; and
the first end is attached to the outer shaft portion, the plate passes through the longitudinal slot, and the second end is attached to the inner shaft portion.

20 10. The catheter according to claim 9, wherein rotation of the inner shaft portion relative to the outer shaft portion converts the electrode from the first configuration to the second configuration.

25 11. A catheter comprising:
a longitudinal catheter shaft for positioning an ablation electrode within a patient's body; and
an ablation electrode disposed on the shaft, the electrode having a continuous outer ablating surface area, wherein the outer ablating surface area is
30 adjustable; and wherein
the electrode is substantially comprised of metal.

- 16 -

12. The catheter according to claim 11, wherein the electrode is substantially comprised of at least one of: platinum; silver; gold; chromium; aluminum and tungsten.

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13. The catheter according to claim 11, wherein the electrode is substantially comprised of a combination of at least two of: platinum; silver; gold; chromium; aluminum and tungsten.

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14. A catheter comprising:
a longitudinal catheter shaft for positioning an ablation electrode within a patient's body; and
an ablation electrode comprising a metal sheet disposed on the shaft, the metal sheet forming an electrode outer surface that is substantially continuous along both a longitudinal direction and a circumferential direction; wherein
the electrode is convertible from a first configuration in which the electrode outer surface has a first radial size to a second configuration in which the electrode outer surface has a second radial size.

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15. The catheter according to claim 14, wherein the ablation electrode is cylindrical.

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16. An ablation electrode for ablating tissue, comprising:
a first ablation electrode portion configured for mounting on a catheter shaft, the first ablation electrode portion having an outer surface configured to emit electrical energy; and

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a second ablation electrode portion configured for mounting on the catheter shaft, the second ablation electrode portion having a surface configured to emit electrical energy; wherein

- 17 -

the second ablation electrode portion is moveable from a first position substantially inside the first ablation electrode portion to a second position substantially outside the first ablation electrode portion.

5 17. The ablation electrode according to claim 16, further comprising a third ablation electrode portion configured for mounting on the catheter shaft, the third ablation electrode portion having a surface configured to emit electrical energy, wherein

 the third ablation electrode portion is moveable from a first position
10 substantially inside the second ablation electrode portion to a second position substantially outside the second ablation electrode portion.

 18. The ablation electrode according to claim 16, in combination with a longitudinal catheter shaft for positioning an ablation electrode within a patient's
15 body, wherein the first ablation electrode and the second ablation electrode are mounted on the catheter shaft.

 19. The combination according to claim 18, further comprising a pull wire configured to move the second electrode portion.

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 20. A catheter shaft comprising:
 an outer shaft portion having a longitudinal passage extending through an outer surface;

 an inner shaft portion;
25 an electrode surface with a first end and a second end, the first end coupled to the inner shaft portion, and the second end coupled to the outer shaft portion, wherein

 the electrode surface passes through the longitudinal passage;
 one of the outer shaft portion and the inner shaft portion is rotatable
30 relative to the other of the outer shaft portion and the inner shaft portion; and

- 18 -

relative rotation of the inner shaft portion and the outer shaft portion extends the electrode surface in a radial direction away from the outer shaft portion.

21. The catheter shaft according to claim 20, wherein relative rotation of the inner shaft portion and the outer shaft portion retracts the electrode surface in a radial direction toward the outer shaft portion.

22. The catheter shaft according to claim 20, wherein the inner shaft portion and the outer shaft portion are cylindrical.

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23. The catheter shaft according to claim 20, wherein the electrode surface comprises at least one of: platinum; silver; gold; chromium; aluminum and tungsten.

24. A catheter shaft comprising:
an outer shaft portion having a passage extending through an outer surface;
an inner shaft portion;
an ablation electrode member configured to pass through the passage;
and
a biasing element that biases the electrode member.

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25. The catheter shaft according to claim 24, wherein the inner shaft portion is configured to urge the ablation electrode member through the passage in a direction away from the inner shaft portion when the inner shaft portion rotates.

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26. The catheter shaft according to claim 25, wherein the biasing element is configured to bias the electrode member toward the inner shaft member.

27. The catheter shaft according to claim 26, wherein the passage is a longitudinal slot.

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- 19 -

28. the catheter shaft according to claim 27, wherein the ablation electrode member is a fin.

29. The catheter shaft according to claim 27, comprising two ablation
5 electrode members.

30. The catheter shaft according to claim 27, wherein the two ablation electrode members extend in opposite directions to one another.

10 31. The catheter according to claim 24, wherein the ablation electrode member is comprised substantially of metal.